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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,916	02/14/2002	Matthias Weiss	A34942	1714

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NEW YORK, NY 10112

EXAMINER

TSAI, HENRY

ART UNIT PAPER NUMBER

2181

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/075,916	Applicant(s) WEISS ET AL.	
	Examiner Henry W.H. Tsai	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-17 is/are allowed.
- 6) ☒ Claim(s) 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/16/05 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, in claim 18, "an instruction word buffer for storing previously used instruction word parts having a width which is at least equal to the bit width of the instruction words" must be shown or the feature(s) canceled from the claim(s). Note in Fig. 9, sequence memory 9 has a width which is less than the bit width of the instruction words. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered

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and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s),

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at the time the application was filed, had possession of the claimed invention. In claim 18, lines 7-8, "an instruction word buffer for storing previously used instruction word parts having a width which is at least equal to the bit width of the instruction words" is not described in the specification. Note in Fig. 9, sequence memory 9 has a width which is less than the bit width of the instruction words.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, lines 7-8, it is not clear what is meant by "an instruction word buffer for storing previously used instruction word parts having a width which is at least equal to the bit width of the instruction words" since it was not described in the specification and drawings.

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In claim 18, it is not clear why instruction word memory is addressed by an address generation to recall previously used instruction word parts. Note in line 7, only instruction word buffer (not the instruction word memory) is mentioned for storing previously used instruction word parts. How can the instruction word memory be addressed by an address generation to recall previously used instruction word parts without storing the previously used instruction word parts ?

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claim 18, as best understood, is rejected under 35 U.S.C. 102(b) as being anticipated by Desal et al. (U.S. Patent No. 5,347,638) (hereafter referred to as Desal et al.'638).

Referring to claim 18, Desal et al.'638 discloses as claimed an arrangement for the generation of instruction words (inside register file 202, see Fig. 3, and also see col. 6, lines 32-39, regarding the instruction words stored in the register file 202) for driving functional units in a processor (when the Desal et al.'638 connected with the processor), the arrangement comprising: an instruction word memory (register file 202, see Fig. 3) assigned to the functional units (inside the connected processor); and an instruction word buffer (such as the instruction cache memory inside the connected processor) for storing previously used instruction word parts (since the instructions in a cache can be read again when in hit condition during a memory reference) having a width which is at least equal to the bit width of the instruction words, wherein the instruction word buffer comprises a memory with random or fixed-programmed row-by-row access, and wherein the instruction word memory is addressed by an address generation unit (inside controller 200, see col. 6, lines 67-68, and col. 7, lines 3-4, regarding the controller 200 providing address information to

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the register 202) to recall previously used instruction word parts.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desal et al. (U.S. Patent No. 5,347,638) (hereafter referred to as Desal et al.'638) in view of Miller (U.S. Patent No. 5,079,693) (hereafter referred to as Miller'693).

As to claim 19, Desal et al.'638 also discloses: a read pointer register (R. pointer register 280, see Fig. 3) and a write pointer register (W. pointer register 270, see Fig. 3) are arranged in the generation unit (inside controller 200, see col.

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6, lines 67-68, and col. 7, lines 3-4, regarding the controller 200 providing address information to the register 202).

However, Desal et al.'638 dose not explicitly disclose: the read pointer register and the write pointer register are assigned respective up/down counters (216, and 266 see Fig. 4) whose ring counting properties (since there are INC 214 and INC 266 for incrementing) are determined by the content of the block length register (note a block length is a predetermined number inherently saved in the Miller'693's system such as in the register inside RAM and connected with counter 216 by bus 220, see Fig. 4, see also col. 5, lines 29-31, or in a memory controller in the Miller'693's system).

Desal et al.'638's system needs to generate a specific address for each memory (202) reference. It is time consuming especially when a big amount of the memory references are to be executed. However, it is well known in the art to use an up/down counter in order to provide the addresses in sequence for memory references to improve the performance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Desal et al.'638's system to comprise: the read pointer register and the

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write pointer register being assigned respective up/down counters whose ring counting properties are determined by the content of the block length register, as taught by Miller'693, in order to efficiently read or write the instruction word memory for the Desal et al.'638's system when a big amount of the memory references are to be executed.

Allowable Subject Matter

10. Claims 10-17 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter: Desal et al.'638 and Miller'639, the closest references, and the other prior art do not teach or fairly suggest: the steps of reading from the instruction word memory an instruction word and writing the instruction word into the instruction word memory after it is modified by substituting an instruction word part with an information part of an associated program word (in claim 10 and 15) in combination with all of the other limitations in the respective independent claims 10 and 15. Besides, the combination is not obvious.

Response to Amendment

12. Applicant's arguments filed 10/24/05 have been fully considered but they are not deemed to be persuasive.

Regarding the 35 U.S.C. §112, second paragraph and drawings problems, Applicant's response has not completely overcome these objections and rejections.

Applicants argue that "With respect to the objections to the drawings and claim 18, applicants note that FIG. 1 shows a sequence memory 9, which can act as "an instruction word buffer for storing previously used instruction word parts." Similarly, "a free row in the instruction word memory 24 or in additional instruction word memory 30'' can act as instruction word buffer" (page 6, lines 17-20 and page 7, lines 1). Examiner disagrees with Applicants. As set forth in the 112 first and 2nd rejections above, in claim 18, lines 7-8, it is not clear what is meant by "an instruction word buffer for storing previously used instruction word parts having a width which is at least equal to the bit width of the instruction words" since it was not described in the specification and drawings. Note in Fig. 9, sequence memory 9 has a width which is less than the bit width of the instruction words. The sequence memory 9, just like any memory in the system, can be

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act as an instruction word buffer. However, it does have the feature of having a width which is at least equal to the bit width of the instruction words as claimed. Further, the specification does not clearly or explicitly indicates that "a free row in the instruction word memory 24 or in additional instruction word memory 30" can act as instruction word buffer as claimed.

Applicants also argue that "Desai does not disclose a buffer for storing previously-used word parts or one which is addressed to recall previously-used instruction word parts (for reuse in generating "new" instruction words for execution), as is required by claim 18" (page 7, lines 15-18). Examiner disagrees with Applicants. As set forth in the art rejections, Referring to claim 18, Desai et al.'638 discloses as claimed an arrangement for the generation of instruction words (inside register file 202, see Fig. 3, and also see col. 6, lines 32-39, regarding the instruction words stored in the register file 202) for driving functional units in a processor (when the Desai et al.'638 connected with the processor), the arrangement comprising: an instruction word buffer (such as the instruction cache memory inside the connected processor) for storing previously used instruction word parts (since the instructions in a cache can be read again when in hit condition during a

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memory reference) having a width which is at least equal to the bit width of the instruction words, wherein the instruction word buffer comprises a memory with random or fixed-programmed row-by-row access, and wherein the instruction word memory is addressed by an address generation unit (inside controller 200, see col. 6, lines 67-68, and col. 7, lines 3-4, regarding the controller 200 providing address information to the register 202) to recall previously used instruction word parts.

In summary, Desal et al.'638 anticipates the claimed invention.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

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from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

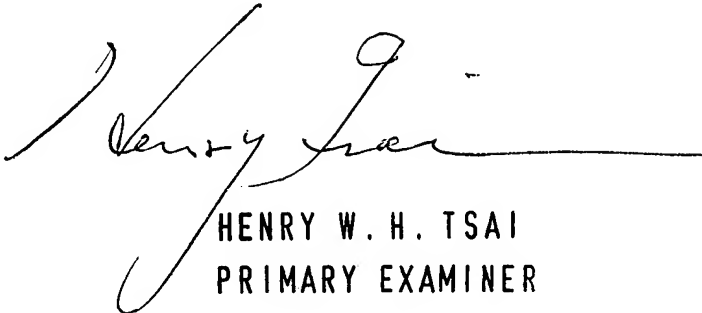
Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (571) 272-4176. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Dov Popovici, can be reached on (571) 272-4083. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to **the TC central telephone number, 571-272-2100.**

15. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into **the Group at fax number: 571-273-8300.** This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account.

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Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI
PRIMARY EXAMINER

December 26, 2005